

**SUPPLEMENTAL SAMPLING PLAN FOR  
THE VESSEL *CAPTAIN H.A. DOWNING***

*PREPARED FOR:*

**LOUIS J. TIMCHAK, JR.  
COURT APPOINTED RECEIVER**

*PREPARED BY:*



***Environmental Consulting & Technology, Inc.***

**1408 North Westshore Boulevard  
Suite 115**

**Tampa, Florida 33607**

**(813) 289-9338**

**Facsimile: (813) 289-9388**

**010344-0300**

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## TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1-1</b>
1.1	PURPOSE.....	1-1
1.2	FORMAT.....	1-2
<b>2.</b>	<b>POTENTIAL CONTAMINATION IN THE <i>CAPTAIN H.A. DOWNING</i> ....</b>	<b>2-1</b>
2.1	POTENTIAL PETROLEUM CONTAMINATION FROM THE CAPTAIN H. A. DOWNING .....	2-2
2.1.1	Recent Cargoes.....	2-2
2.1.2	Laboratory Indicator Parameters for Residual Petroleum .....	2-2
2.2	MINIMUM VESSEL CLEANLINESS .....	2-3
2.3	VESSEL CLEANING PROCEDURES.....	2-4
<b>3.</b>	<b>SAMPLING AND ANALYSIS PLAN.....</b>	<b>3-1</b>
3.1	PHASE I: PRIOR TO INITIAL SHIPMENT .....	3-1
3.2	PHASE II: INITIAL SHIPMENT .....	3-2
3.3	ONGOING CONFIRMATION SAMPLING AND ANALYSES .....	3-3

## APPENDICES

APPENDIX A—MATERIAL SAFETY DATA SHEETS – VACUUM GAS OIL  
APPENDIX B—MATERIAL SAFETY DATA SHEETS – GYRO PIER &  
DECK CLEANER

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## LIST OF TABLES

TABLE 1. RESIDUAL PETROLEUM SAMPLING ANALYTES

TABLE 2. MINIMUM CLEANLINESS CRITERIA—WATER ON BOARD

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## 1. INTRODUCTION

On April 9, 2003, the U.S. Environmental Protection Agency Region 4 (EPA) issued permit no. OD 03-01 (Permit) to the Florida Department of Environmental Protection (FDEP or the Department) in accordance with the rules promulgated by EPA under the Marine Protection, Research, and Sanctuaries Act. The Permit authorizes the dispersion of fully-treated water in a 19,557 square mile area within the Gulf of Mexico provided 26 general and 27 specific conditions are met.

Dispersion of treated water began on July 20, 2003 utilizing the chartered *Barge New York*. To date, the *Barge New York* has completed 19 voyages and dispersed over 122 million gallons of treated water. Dispersion utilizing the *Barge New York* will continue throughout the term of the permit.

In addition, a second vessel, the *Captain H.A. Downing* has been selected to increase the volume of treated water dispersed throughout the duration of the permit. The additional volume to be dispersed will facilitate, but will not ensure, meeting the 2003 offshore dispersion goals described in the permit application. It is the intent of the Department to place the *Captain H.A. Downing* into service as soon as practical.

### 1.1 PURPOSE

Specific condition no. 22 of the Permit states:

The permittee shall submit for review and following approval by EPA, shall implement a wastewater quality verification plan prior to initiation of disposal activities. The purpose of the plan is to verify that the wastewater has not been contaminated as a result of contact with the pipeline, storage tanks, or vessel storage facilities. Based on the test results required as part of this plan, EPA will determine if the wastewater has been contaminated and whether and what permit modifications are appropriate. The plan shall include, but not be limited to:

- a. Identification of potential contaminants introduced by contact with the pipeline, storage tanks, or the vessel storage facilities;
- b. Collection procedures, frequencies and locations of wastewater samples to be collected at the Piney Point facility downstream of the acidulation station and from each disposal vessel; and
- c. The methods for analysis for the identified constituents.

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On July 2, 2003, a wastewater quality verification plan entitled *Sampling Plan for Dispersion of Fully-Treated Water* was forwarded to EPA for approval. Following the receipt of EPA's approval, consultants and contractors for the site Receiver implemented this plan. Results demonstrating successful cleaning of the pipeline and the *Barge New York* were submitted as part of the monthly reports required under the permit.

The purpose of this supplemental sampling plan is to prescribe similar cleanliness testing procedures for the *Captain H.A. Downing* in order to ensure compliance with Specific Condition No. 22 of the Permit. Thus, this report does not address either the pipeline or the *Barge New York* because these facilities have already been demonstrated to be free from residual contamination.

## **1.2 FORMAT**

The format of this supplemental sampling plan is straightforward. Section 2 discusses the potential contaminants that could be introduced into the treated water by contact with the holds (tanks) or pipelines of the *Captain H.A. Downing*, given the products the vessel has recently carried. Section 3 presents the proposed sample collection procedures, locations, and frequencies as well as the proposed list of analytical constituents, the laboratory analytical methods, and the laboratory analytical detection limits.

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## 2. POTENTIAL CONTAMINATION IN THE *CAPTAIN H.A. DOWNING*

The *Captain H.A. Downing* is a double-hulled, U.S. flagged, 40,000-ton bulk liquid cargo ship that entered service in the 1995-1996 time period. The vessel has 12 cargo holds that can contain up to 270,000 barrels, or 11.3 million gallons of liquids. The effective capacity; however, is 36,000 tons of lifting capacity, which equates to a draft of 36 feet 10 inches. The capacity of the vessel to transport and disperse fully-treated Piney Point water will be based upon the weight of the water and the draft available in the shipping channels in and near Port Manatee.

The cargo tanks of the *Captain H.A. Downing* are epoxy coated; the epoxy coating is over 99 percent intact according to the vessel's operator, American Heavy Lifting (AHL) Shipping. Each tank is equipped with a dedicated well (i.e. submerged pump) and pipeline to lift cargo to the deck of the ship and one pipeline to load each tank. Because the vessel is double-hulled, there are no cross-member beams or ribs inside the cargo tanks to provide structural strength for the vessel, as is the case for the *Barge New York*.

In addition, the *Captain H.A. Downing* is designed to quickly shift the types of cargoes carried. In order to achieve this objective, the vessel is equipped with an automated cleaning system consisting of pressurized "fixed cow" machines in each tank that can utilize ambient or heated sea water and detergent and two separate dedicated wastewater holding (i.e. "slop") tanks. Each cargo hold can be accessed for inspection and sampling, and the vessel has the capability to supply up to 4,100 cubic feet per minute of ventilation air into the cargo tanks.

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## **2.1 POTENTIAL PETROLEUM CONTAMINATION FROM THE CAPTAIN H. A. DOWNING**

The *Captain H.A. Downing* has recently been used to move a variety of liquid petroleum products. The vessel will soon be chartered for the exclusive transportation and dispersion of fully treated Piney Point water. Therefore, provided the vessel is thoroughly cleaned prior to the initial shipment, this chartering procedure will eliminate the potential for contamination of the treated Piney Point water with residual petroleum hydrocarbons during subsequent voyages.

### **2.1.1 Recent Cargoes**

According to Mr. Jere White, AHL Shipping's representative, the *Captain H.A. Downing* has recently carried unleaded gasoline, low sulfur diesel fuel, and light and medium vacuum gas oil. The organic chemical constituents in gasoline and diesel fuel are, of course, well known. However, because the organic chemical constituents in vacuum gas oil may not be well known, Appendix A contains Material Safety Data Sheets for these products.

### **2.1.2 Laboratory Indicator Parameters for Residual Petroleum**

In order to detect whether residual petroleum products remain in the *Captain H.A. Downing* following its upcoming cleaning, Table 1 below lists the laboratory analytes proposed to serve as the indicators of residual petroleum contamination:

**Table 1**  
**Residual Petroleum Sampling Analytes**

Analyte	Method	Detection Limit
Oil & Grease	EPA 1664	0.73 mg/L
Surfactants (MBAS)	EPA 425	0.039 mg/L
TRPH	FL-PRO	0.3 mg/L
Naphthalene	EPA 624	10.0 µg/L
Benzene	EPA 624	1.0 µg/L

Notes: mg/L – Milligrams per liter.  
µg/L = Micrograms per liter.

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Of these analytical parameters, oil & grease and total recoverable petroleum hydrocarbons (TRPH) are intended to be indicators of the presence of residual petroleum of any type; the objective is to ensure that no visible sheen occurs during dispersion of the treated water. The surfactants analyte is intended to ensure that all cleaning detergents have been thoroughly rinsed from the tanks and pipelines to prevent foaming when the water is dispersed. Naphthalene has been selected as the indicator of the presence of semi-volatile polynuclear aromatic hydrocarbons (PAHs) that are present in diesel fuel and the vacuum gas oils. Finally, benzene is proposed to serve as the indicator of the presence of residual gasoline.

## **2.2 MINIMUM VESSEL CLEANLINESS**

In order to conservatively protect marine water quality in the dispersion area, the vessel will be cleaned such that the initial shipment (i.e. load) of water contains less than the levels of pollutants shown in Table 2 below. Levels in excess of the values shown in Table 2 are considered indicative of the presence of petroleum hydrocarbons in general, and specifically gasoline, diesel fuel, and vacuum gas oils:

**Table 2**  
**Minimum Cleanliness Criteria—Water On Board**

Analyte	Minimum Criteria
Oil & Grease	<5 mg/L
Detergents	<0.5 mg/L
TRPHs	<5 mg/L
Benzene	<71 µg/L
Naphthalene	<100 µg/L

Rinse water or samples collected following cleaning, but prior to loading the initial shipment, are not proposed to meet these criteria. Rather, these samples are proposed to meet a criteria of ten times the values listed above. This approach conservatively ensures adherence to these criteria, given the volume of dilution that will occur during the initial loading.

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The values listed in Table 2 are the marine water quality standards adopted by the Department, except for naphthalene and TRPH, for which there are no water quality standards<sup>1</sup>. The naphthalene and TRPH standards are the water-quality based effluent standards applied by EPA and the Department at petroleum remediation sites that discharge water into surface marine water environments.

Because the *Captain H.A. Downing* will be chartered as a dedicated vessel to exclusively transport fully-treated water during the authorized dispersion period, there is a very low probability of recontamination once the vessel is cleaned. Therefore, all subsequent shipments should be cleaner than the initial shipment.

### **2.3 VESSEL CLEANING PROCEDURES**

AHL Shipping has provided the following description of the cleaning procedures to be employed to ensure that fully treated Piney Point water loaded into the cargo tanks of the *Captain H.A. Downing* meets the minimum cleanliness criteria listed in Table 2:

1. Upon completion of the discharge of the present cargo, strip (i.e. empty or drain) tanks thoroughly dry of cargo. This step will occur at a Houston area port.
2. Proceed to travel to the Tampa Sea Buoy while cleaning en route using the onboard personnel and equipment.
3. Each cargo tank will be pressure washed using heated sea water applied by the fixed tank washing machines. The water temperature will be approximately 140-150 degrees Fahrenheit (°F); the water pressure will be approximately 130-150 pounds per square inch (psi); and the approximate cleaning time per tank will be 2 hours.

All wash and rinse water will be decanted to the no. 7 port tank. This tank is separate from the cargo tanks and is a dedicated “slop tank”.

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<sup>1</sup> EPA's National Recommended Water Quality Criteria do not suggest criteria for any of these parameters in salt water. Therefore, FDEP's marine water quality criteria are used instead.

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4. Following washing, each tank will be ventilated using forced air fans to exhaust any remnant explosive gases. Once vented, each tank will be entered by the ship's crew and visually inspected.
  5. If the inspections reveal areas with visual contamination, these areas will be re-washed using portable Butterworth machines. The water used to perform these supplemental cleanings will be sea water heated to 140-150 °F and applied at 130-150 psi. All supplemental wash and rinse water will be decanted to the no. 7 port "slop tank".
  6. In the event heated sea water alone applied at 130-150 psi is insufficient to clean the tanks, "Gyro Pier and Deck Cleaner" detergent will be added to the wash water as necessary to clean "problem areas" requiring a degreaser type chemical; Appendix B contains information about this proposed cleaning chemical. If the chemical is required, then hand scrubbing may be used instead of the portable Butterworth machines.
  7. While en route, the no. 7 port "slop tank" will be decanted as per Marpol regulations. Upon arrival at Port Manatee, all remaining liquids will be emptied into trucks and transported to a permitted wastewater treatment facility for appropriate disposal.

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### 3. SAMPLING AND ANALYSIS PLAN

A two-phase confirmation sampling protocol is proposed to ensure conformance with Specific Condition no. 22 of the Permit: (1) prior to the initial shipment; and (2) the initial shipment. The objective is to confirm that the vessel cleaning procedures have been effective and that contact with the vessel's tank and pipeline surfaces will not cause the water to exceed the cleanliness criteria presented in Table 2.

#### **3.1 PHASE I: PRIOR TO INITIAL SHIPMENT**

Prior to transferring any water from the Piney Point complex into the *Captain H.A. Downing*, it will be necessary to confirm that the procedures for cleaning the vessel have been effective. Accordingly, a series of samples will be collected and analyzed to confirm that the initial shipment will meet the criteria listed in Table 2.

As soon as AHL Shipping completes the cleaning and rinsing protocols described in Section 2.3 above, they will contact the site Receiver's consultant (Environmental Consulting & Technology, Inc. [ECT]) when they believe the vessel is clean. ECT technicians will then board the vessel and collect grab samples of the rinse water from each cargo tank. In the event fresh rinse water is not available, ECT technicians will spray the walls of each tank with fresh water and also run fresh water through the loading and unloading pipeline systems. Grab samples of this water will be collected from each tank and submitted to the Severn Trent Laboratory in Tampa for the analyses listed in Table 1.

If analyses using these methods indicate that the levels of the analytes in the rinse water are less than 10 times the cleanliness levels listed in Table 2, then each tank meeting these criteria will be considered clean. If these analyses indicate that the rinse water contains more than 10 times the cleanliness levels listed in Table 2, the vessel will be advised to repeat their wash and rinse cycles and advise ECT when to return to repeat these sampling procedures. (Note: the application of 10 times the cleanliness criteria is

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based upon the fact that not more than 100,000 gallons of rinse water will remain in the tanks and that the *Captain H.A. Downing* has a capacity of over 8 million gallons. Thus, a minimum dilution of over 80 times will occur with the first shipment. As a result, if the final rinse water contains less than 10 times the prescribed cleanliness levels, the initial shipment will meet these water quality based standards.)

All samples will be collected in accordance with FDEP's standard quality assurance operating procedures prescribed by Chapter 62-160 of the Florida Administrative Code. Samples will be placed in laboratory supplied sample containers, chilled on ice to less than 4 degrees Celsius (4° C), and transported to the laboratory immediately after the sampling event has been completed. The laboratory will be instructed to report the results within the shortest period possible after receipt of the samples. Once the laboratory analyses indicate that the levels of potential contaminants are less than 10 times the specified cleanliness levels for all tanks and pipeline systems, then the vessel will be declared ready to accept shipments of fully-treated water.

### **3.2 PHASE II: INITIAL SHIPMENT**

As the initial shipment is being loaded, a series of grab samples will be collected from each of the cargo holds and analyzed using the sampling procedures and methods described in Section 3.1 above. These results will be used to indicate whether any apparent contamination is being detected in excess of the cleanliness levels prescribed in Table 2.

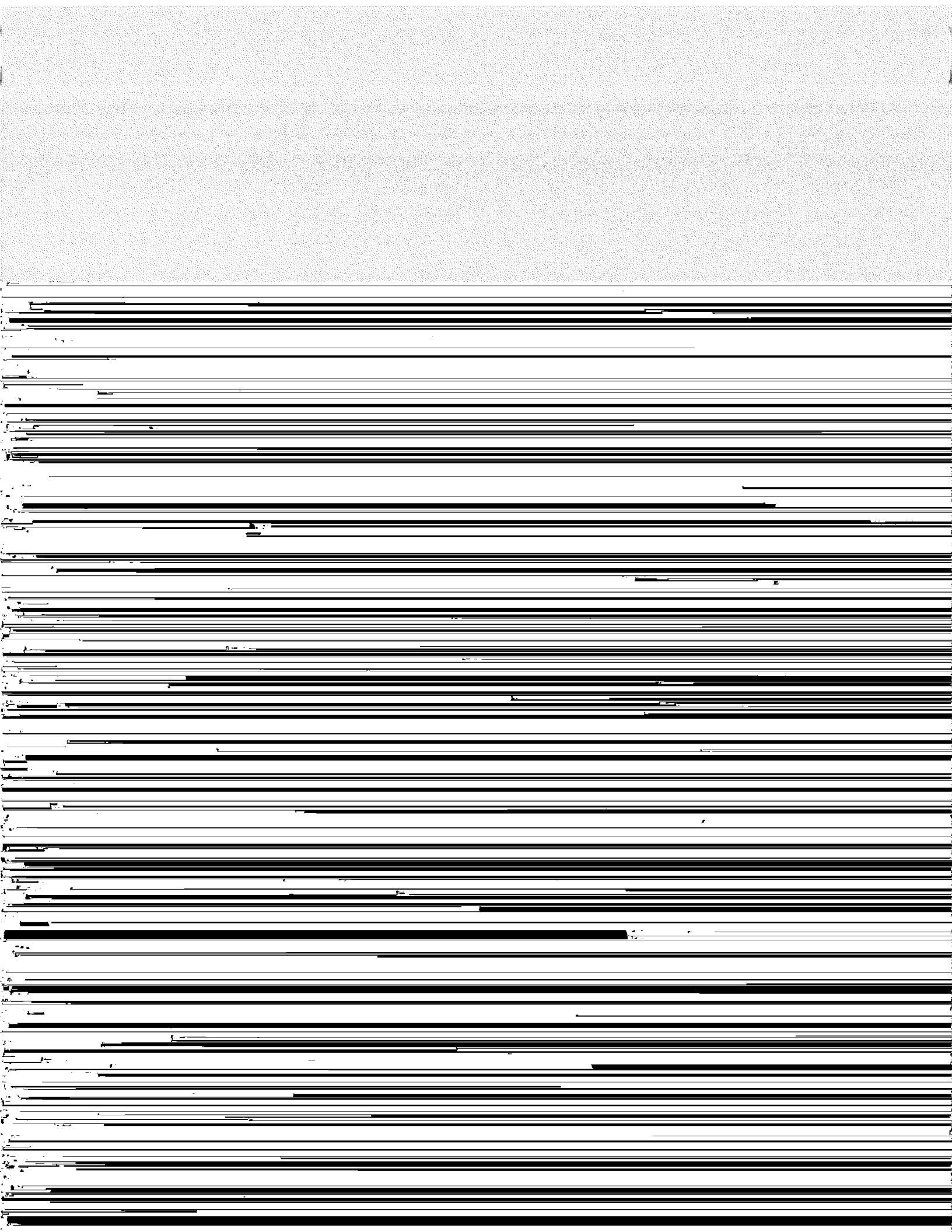
Grab samples from each of the 12 cargo holds will be collected as the ship is being loaded and manually composited into six samples. The manually composited samples will then be transferred into laboratory-supplied containers, placed on ice to chill to less than 4° C, and transported to Severn Trent's Tampa laboratory immediately after the samples are collected. Laboratory analyses of the composite samples will be conducted for the parameters listed in Table 1 using those same analytical methods. The results will be forward to EPA in order to document that the wastewater has not been contaminated.

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Separately, five discreet grab samples of fully treated water will be collected from a sampling port in the pipeline used to transfer water from the Piney Point No. 2 holding basin to the *Captain H.A. Downing*. These samples will be collected while the initial shipment is being loaded and analyzed for the parameters listed in Table 1. Data from these analyses will be used to verify that the wastewater has not been contaminated during transportation from Piney Point to the vessel.

### **3.3 ONGOING CONFIRMATION SAMPLING AND ANALYSES**

As noted earlier in this plan, the probability of contamination of the treated water through contact with the vessel will be the greatest during the initial shipment due to the prior use of the vessel for the transportation of petroleum products. Use of dedicated equipment lessens the probability of contamination with each subsequent shipment.





## MATERIAL SAFETY DATA SHEET

<b>WHMIS CLASSIFICATION</b>			
Combustible Liquid (Class B3)* Poisonous Material (Class D2)		PRODUCT CODE: N/A CHEMICAL CODE: 9325-02 DATE: January, 2002	
<b>SECTION 1 – MATERIAL IDENTIFICATION</b>			
Trade Name: Other Names:		HEAVY VACUUM GAS OIL Atmospheric Gas Oil (AGO) Light Gas Oil Heavy Gas Oil Combined Gas Oils	
Chemical Synonyms and Family:		Petroleum Hydrocarbon	
Name of Manufacturer/Supplier Address & Phone #:		MOOSE JAW ASPHALT INC. P.O. Box 2000 Moose Jaw, Sask. S6H 6E3 (306) 691-7800	
Poison Control Centre Numbers:		Consult local telephone directory for emergency numbers.	
Application:		Atmospheric Gas Oil is a petroleum process oil produced in the crude primary distillation tower and is used as liquid fuel oil.	
<b>SECTION 2 – TRANSPORTATION (NR – Not Regulated by TDG)</b>			
UN Number:	NR	Primary Classification:	NR
Subsidiary Classification:	NR	Compatibility Groups:	NR
CANUTEC Transport Emergency Number:		(613) 996-6666	
<b>SECTION 3 – COMPOSITION</b>			
Components	Allowable Limits (8 hr.)	% (Volume)	CAS #
Complex mixture of aliphatic/ aromatic hydrocarbons (C <sub>7</sub> - C <sub>50</sub> )	none established	100	68783-08-4 68410-00-4 68915-97-9 64741-43-1
* Some gas oils have flash points > 93.3°C in which case the B3 designation can be deleted.			
<b>SECTION 4 – PHYSICAL DATA</b>			
Density (at 15°C):	0.90 kg/L (approx.)	Boiling point/range(at 1 atm):	138-558°C(wide range)
Vapor Pressure(at 25°C):	<1.0 kPa (approx.)	Percent Volatile (at 20°C):	0%
Vapor Density (at 20°C):	N/A	Evaporation Rate:	N/A
Solubility in Water:	Negligible	Pour Point:	4°C
Viscosity (Kinematic):	20 cSt (at 40°C, approx.)	Appearance and Odour:	Dark green viscous liquid with hydrocarbon odour.

## SECTION 5 – FIRE and EXPLOSION DATA

Flash Point (method used = P-M C):	104°C
Flammable limits in air (% by volume):	N/A
Auto-Ignition Temperature:	Unknown
Fire and Explosion Hazards:	Treat as a combustible liquid. Addition of water or foam may cause frothing. Do not cut, drill or weld empty containers.
Extinguishing Media:	Foam, dry chemical, water spray, carbon dioxide for small fires.
Firefighting Procedures: LOW FIRE HAZARD	Contain spill. Cover with extinguishing agent. Use water spray to cool fire-exposed containers and as a protective screen. To avoid spreading do not point solid water stream directly into burning oil.

## SECTION 6 – HEALTH HAZARD INFORMATION

<u>Toxicity Data</u>	Some of these atmospheric gas oils may contain polycyclic aromatic hydrocarbons, several of which have been identified as carcinogenic to experimental animals.
<u>Effects of Overexposure</u>	
Inhalation:	Due to low volatility, inhalation is unlikely.
Skin and Eyes:	Hot LRF burns skin and eyes. Cold LRF could cause irritation to eyes. Prolonged or repeated contact with skin may cause dermatitis or warty skin growths (keratosis) and potential skin cancer. AVOID SKIN CONTACT.
Ingestion:	Ingestion is unlikely.
<u>Emergency and First Aid Procedures Information</u>	
Skin:	For hot LRF splashes, cool affected area with water immersion or shower. Remove contaminated clothing - launder before reuse. Soap and water wash. Discard saturated leather articles. Physician assessment necessary if redness or irritation occurs. For skin soiling without underlying burns, cleanse with mineral oil followed by soap and water. Use olive oil in vicinity of eyes.
Eyes:	Copious warm water flush - 15 minutes. Physician assessment necessary if eyes inflamed. Cleanse soiling with olive oil.
Inhalation:	Evacuate to fresh air. Apply cardio-pulmonary resuscitation if required. Administer oxygen if available. If resuscitation is required, physician assessment mandatory.
Ingestion:	DO NOT INDUCE VOMITING. Force fluids. Activated charcoal tablets. Physician assessment mandatory.
NOTE TO PHYSICIAN:	The ingestion of process oils is an unlikely event. No specific therapy is indicated. Treat with supportive measures as appropriate to the patient's condition. Only medically approved solvents may be used to remove LRF from burns, as other solvents could cause further skin damage.

SECTION 7 – REACTIVITY DATA	
Stability:	Stable.
Conditions to avoid:	Excessive heat.
Materials to avoid:	Strong oxidizing agents (strong acids, peroxides, chlorine, etc.)
Hazardous decomposition products:	COx, SOx, NOx, smoke on combustion.
Can hazardous polymerization occur?	NO
SECTION 8 – SPILL OR LEAK PROCEDURES	
Steps to be taken if material is released or spilled:	Contain spill. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. Scoop up used absorbent and rags into drums.
Waste Disposal Method:	Dispose in approved landfill site or licensed waste reclaimer facility.
SECTION 9 – SPECIAL PROTECTION INFORMATION	
Ventilation:	General ventilation.
Respiratory Protection:	Normally not necessary. If mist generated by excessive heating, wear approved organic vapor respirator suitable for oil mist in areas with sufficient oxygen.
Protective Gloves:	Nitrile, Viton
Eye Protection:	Chemical goggles.
Other Protective Clothing:	Oil resistant clothing, if direct contact with liquid is likely.
SECTION 10 – SPECIAL PRECAUTIONS	
High standards of personal hygiene are necessary. Wash hands after handling and before eating. AVOID INHALATION AND SKIN CONTACT. Launder work clothes frequently. Discard saturated leather goods.	
SECTION 11 – REFERENCES	
ACGIH, Threshold Limit Values and Biological Exposure Indices for 1987-88.	
CONCAWE, First Aid Measures, Medical Toxicology Data and Professional Advice to Clinicians on Petroleum Products, Feb. 1983.	
API, Petroleum Process Stream Terms Included in the Chemical Substances Inventory Under the Toxic Substances Control Act (TSCA), 1983.	
API, Carcinogenic Potential of Petroleum Hydrocarbons, 1979.	
IARC, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 33, April 1984.	
Moose Jaw Asphalt Inc. assumes no responsibility for injury to anyone caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Moose Jaw Asphalt Inc. assumes no responsibility for injury to anyone caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee and third persons assume the risk in their use of the material.	
Moose Jaw Asphalt Inc.	
Prepared by Health, Safety and Security	

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

El Paso Corporation  
and its subsidiaries  
1001 Louisiana Street  
Houston, Texas 77002

Information: (713) 420-2600  
CHEMTREC: (800) 424-9300

Product Name: Heavy Vacuum Gas Oil  
MSDS Number: A0087.msd

Last Revision: 08/02/01  
Date Prepared: 05/15/91

Synonyms: Crude Oil Petroleum Distillate, Vacuum Gas Oil

Product Description: A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C20 through C50 and boiling in the range of approximately 662E to 1112EF.

### 2. COMPOSITION & INFORMATION ON INGREDIENTS

			Occupational Exposure Limits*			
			OSHA	ACGIH		
Product	CAS No.	Wt%	PEL	TLV	Other	Units
Heavy Vacuum Gas Oil	64741-57-7	100	N/A	N/A	N/A	
Component(s)						
Polynuclear Aromatic	N/A	5	0.2	0.2		mg/m <sup>3</sup> **
Hydrocarbons					0.1 NIOSH	mg/m <sup>3</sup> ***
Sulfur Compounds	N/A	1.5	N/A	N/A	N/A	N/A

**CAUTION!** Under certain circumstances sulfur compounds in hot product may form hydrogen sulfide (H<sub>2</sub>S). Cooling product may continue to emit traces of entrapped H<sub>2</sub>S or other dissolved gases.

Key: \* = 8-Hr. TWA unless otherwise specified.  
\*\* = Benzene solubles.  
\*\*\* = Cyclohexane extractables.  
N/A = Not Available or Not Applicable.

### 3. HAZARD IDENTIFICATION

Note: This product has not been tested by El Paso Corporation to determine its specific health hazards. Therefore, the

information provided in this section includes health hazard information on the product components.

Carcinogenicity:	NTP	IARC Monographs	OSHA Regulated
Heavy Vacuum Gas Oil	Yes	Yes	No
Sulfur Compounds	No	No	No

#### Potential Health Effects From Overexposure

##### **Acute Effects:**

Eyes: May cause slight to moderate irritation to the eye. Heated product may cause thermal burns.

Skin: Moderately irritating to the skin. May cause redness and drying of the skin. Heated product may cause thermal burns.

Inhalation: Exposure to vapors or mist may result in irritation of respiratory tract, headache, drowsiness, dizziness or unconsciousness. Hydrogen sulfide can cause headache, dizziness, respiratory paralysis, unconsciousness and/or death.

Ingestion: May cause gastrointestinal irritation, nausea and vomiting. Aspiration hazard if ingested.

##### **Chronic Effects:**

Prolonged and repeated skin contact will dry and defat the skin, leading to irritation and dermatitis. There is sufficient evidence for the carcinogenicity of untreated vacuum distillates in experimental animals.

##### **Additional Medical and Toxicological Information:**

May aggravate pre-existing dermatitis. Studies of refinery streams used in formulating lubricating oils have shown that unprocessed vacuum distillates may cause skin tumors in animal studies.

#### **4. FIRST AID MEASURES**

Eye Contact: Immediately flush with large amounts of water for at least 15 minutes, including under the eyelids. Contact a physician immediately, preferably an ophthalmologist.

Skin Contact: Cool the exposed area immediately. Removed contaminated clothing. Immediately wash affected areas with soap and water. Seek immediate medical attention.

Inhalation: Remove to fresh air. If breathing has stopped, apply artificial respiration. Get immediate medical attention.

Ingestion: Do not induce vomiting. If spontaneous vomiting occurs, hold the victim's head lower than the hips to prevent aspiration.

## 5. FIRE FIGHTING MEASURES

Flash Point: 400EF (COC)

Flammable Limits in Air, % by Volume:

Lower: N/A

Upper: N/A

Autoignition Temperature: N/A

Extinguishing Media: Dry chemical, carbon dioxide, foam, and water spray.

NFPA Ratings: NA

### General Hazard:

This product will ignite when sufficient heat is applied. Flowing fuel can be ignited by self-generated static electricity. Thoroughly wash and clean tanks or vessels and then check for combustible vapors, prior to, and during, welding or torch cutting operations on tanks or vessels.

### Fire Fighting Instructions:

Use a water spray to cool fire-exposed containers. Use a smothering technique for extinguishing fires. Do not use a forced water stream directly on petroleum fires as this may cause frothing and scatter the fire. Firefighters should wear self-contained breathing apparatus and full protective clothing.

## 6. ACCIDENTAL RELEASE

Remove sources of heat or ignition including internal combustion engines and power tools. Remove spill with vacuum trucks or pump and soak up residue with an inert absorbent. Do not flush to sewer or surface water. Use approved respiratory protection where occupational exposure limits may be exceeded.

## 7. HANDLING & STORAGE

Store in tightly closed containers in a dry, cool place, away from sources of heat or ignition. Ground and bond all lines and equipment in contact with this gas. Empty containers may contain residual gas and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition; they may explode and cause injury or death.

## 8. EXPOSURE CONTROL, PERSONAL PROTECTION

Eye Protection: Remove contact lenses and wear chemical safety glasses or goggles where contact with liquid or mist may occur.

Skin Protection: Wear impervious gloves when contact with skin may occur. When skin contact with heated product is possible, wear impervious apron, long sleeves, boots and face shield. Wash with soap and water before eating, drinking or smoking. Launder contaminated clothing before reuse.

Inhalation: Use approved respiratory protective equipment for cleaning large spills or entry into large tanks, vessels, or other confined spaces or in applications where airborne concentrations may exceed occupational exposure levels.

Ventilation: Provide adequate general and local ventilation: (1) to maintain airborne chemical concentrations below applicable exposure limits, (2) to prevent accumulation of flammable vapors and formation of explosive atmospheres, and (3) to prevent formation of oxygen deficient atmospheres, especially in confined spaces. [Note: this product may release gases or vapors that can displace oxygen in enclosed areas.] Follow confined space entry procedures.

## 9. PHYSICAL & CHEMICAL PROPERTIES

Boiling Point 760 mmHg: 540-1025EF	Melting Point: N/A
Vapor Pressure mmHg @ 20EC: N/A	Vapor Density (Air=1): N/A
% Solubility in H <sub>2</sub> O @ 20EC: Insoluble	pH: N/A
Specific Gravity, H <sub>2</sub> O=1: 0.93 @60EF	Evaporation Rate: N/A
% Volatile by Volume: N/A	Odor: Petroleum odor
Viscosity (method, temp.): 28.3 CST @ 120EF	
Appearance: Dark amber liquid	

## 10. STABILITY & REACTIVITY

Stability: Stable under normal conditions of use.

Hazardous Polymerization: Will not occur.

Conditions to Avoid/Incompatibilities: Strong oxidizing agents, heat, sparks, flame and build-up of static electricity.

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide.

## 11. TOXICOLOGICAL INFORMATION

No data available.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL INFORMATION

No data available.

14. TRANSPORT INFORMATION

No data available.

15. REGULATORY INFORMATION

EPA SARA TITLE III

*Section 302 EPCRA Extremely Hazardous Substances (EHS)*

Product Component	CAS No.	Wt%	RQ, lb	TPQ, lb
None				

*Section 304 CERCLA Hazardous Substances*

Product Component	CAS No.	Wt%	RQ, lb
None			

*Section 311/312 Hazard Categorization*

Acute:	Chronic:	Fire:	Pressure:	Reactive:
X	X	X		

*Section 313 EPCRA Toxic Substances*

Product Component	CAS No.	Wt. %
None		

Key:            RQ = Reportable Quantity  
                TPQ = Threshold Planning Quantity of EHS

CALIFORNIA PROPOSITION 65 WARNING

Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in crude oil and petroleum products. Although it is possible to sufficiently refine a crude oil or its end products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling crude oil and petroleum products.

## 16. OTHER INFORMATION

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED.

HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR THEIR OWN PARTICULAR USE.

This is the end of MSDS A0087.msd



**gyro chemical & equipment co., inc.**

Mailing Address – P. O. Box 853 – Deer Park, Texas 77536-0853

Office &amp; Plant – 5206 Railroad Ave.

FAX (281) 479-6239 – E-mail: gyrochem@ghg.net

Phone (281) 479-5905

**Established 1971****TECHNICAL DATA SHEET****PIER & DECK CLEANER**

**Descriptions:** PIER & DECK CLEANER is a water based product formulated to remove grime, dirt and oily deposits from concrete, steel and wooden decks. It will also remove light desposits of animal and vegetable oils.

<b>Specifications:</b>	Appearance	Red liquid
	Specific gravity 60/60°F	1.03
	Kilograms per liter	1.03
	Pounds per U.S. Gallon	8.6
	Flash and fire point	None
	Odor	None
	pH value, neat	10.8
	pH value of 1% water solution	8.7
	pH value of 2% water solution	8.9
	Hydrocarbons solvents	None
	Corrosion, all metals	None
	Solubility, Water	Complete
	Biodegradability	Complete
	Storage, stability	Indefinite

**Application:** PIER & DECK CLEANER can be spayed, mopped or poured on surface. We recommend that surface be scrubbed with stiff bristle broom and rinsed away.

**Precautions:** PIER & DECK CLEANER is a mild alkaline product. Avoid skin and eye contact. In case of skin contact, wash with water and apply a mild cream. In case of eye contact, flush with plenty of water, and get medical attention.

**FOR INDUSTRIAL USE ONLY - DO NOT TAKE INTERNALLY  
KEEP OUT OF REACH OF CHILDREN**

**Packaging:** Product is available in 55 30, and 5 gallon containers or in bulk storage units.

# GYRO Chemical & Equipment Co., Inc.

## Material Safety Data Sheet

Section I		
Manufacturer's Name <b>GYRO CHEMICAL &amp; EQUIPMENT CO., INC.</b>	Emergency Telephone No.: <b>(713) 479-5905</b>	
Address (Number, Street, City, State, and Zip Code) <b>5206 Railroad Ave., Box 853, Deer Park, Texas 77536</b>	Revised Date: <b>November 13, 1996</b>	
Chemical Name <b>CHEMICAL BLEND</b>	Trade Name <b>GYRO PIER &amp; DECK CLEANER</b>	
Chemical Family <b>WATER BASED DETERGENT</b>	Formula: <b>PROPRIETARY</b>	UN# <b>CORROSIVE 1824</b>

Section II - Hazardous Ingredients					
Paints, Preservatives, & Solvents	%	TLV (Units)	Alloys and Metallic Coatings	%	TLV (Units)
Pigments			Base Metal		
Catalyst			Alloys		
Vehicle			Metallic Coatings		
Solvents			Filler Metal Plus Coating or Core Flux		
Additives			Others		
Hazardous Mixtures of Other Liquids, Solids, or Gases				%	TLV (Units)
<b>MONOBUTYL ETHER</b>					<b>50 PPM</b>
<b>SODIUM HYDROXIDE</b>				<b>2</b>	
<b>SODIUM META SILICATE</b>				<b>2</b>	

Section III - Physical Data			
Boiling Point (°F)	<b>230</b>	Specific Gravity (H <sub>2</sub> O = 1)	<b>1.03</b>
Vapor Pressure (mm Hg.)		Percent Volatile (by volume)	
Vapor Density (AIR=1)		Evaporation Rate (ether=1)	
Solubility in Water	<b>COMPLETE</b>		
Appearance and Odor	<b>PINK, SOAPY LIQUID</b>		

Section IV - Fire And Explosion Hazard Data			
Flash Point (Method used)	Flammable Limits	LEL	UEL
<b>NONE</b>	<b>NONE</b>		
Extinguishing Media			
<b>NONE</b>			
Special Fire Fighting Procedures			
<b>NONE</b>			
Unusual Fire and Explosion Hazards			
<b>NONE</b>			

(Continued on Reverse Side)

**Gyro Pier & Deck Cleaner**

Section IV - Health Hazard Data	
Threshold Limit Value	NONE
Effective of Overexposure	DEFATTING OF SKIN TISSUE. EYE IRRITATION IF SPILLED.
Emergency and First Aid Procedures	SKIN CONTACT: WASH WITH WATER AND APPLY MILD CREAM. EYE CONTACT: FLUSH WITH PLENTY OF WATER. IF IRRITATION DEVELOPS CONSULT A PHYSICIAN.

Section VI Reactivity Data			
Stability	Unstable		Condiutions to Avoid
	Stable	X	
Incompatibility (Materials to Avoid)		STRONG OXIDIZING CHEMICALS	
Hazardous Decomposition Products		NONE	
Hazardous Polymerization	May occur		Condiutions to Avoid
	Will not occur	X	

Section VII - Spill or Leak Procedures	
Steps to be taken in case material is released or spilled	
DILUTE WITH WATER OR ABSORB WITH INERT MATERIAL SUCH AS SAND OR EARTH, ETC.	
Waste Disposal Method	
DISPOSE ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS.	

Section VIII - Special Protection Information			
Respiratory Protection (Specify type)			
NONE			
Ventilation	Local Exhaust		Special
		NONE	NONE
	Mechanical (General)		Other
		NONE	NONE
Protective Gloves		Eye Protection	
NEOPRENE OR RUBBERI		GOGGLES OR PLASTIC FACE SHIELD.	
Other Protective Equipment			
NEOPRENE OR RUBBER SUITS AND SHOES. SKIN CREAM. EYE WASH SOLUTION.			

Section IX - Special Precautions	
Precautions To Be Taken In Handling and Storing	
NONE	
Ref: "Dangerous Properties of Industrial Materials" by N. Irvin Sax.	